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10/803,831	03/18/2004	John R. Frank	113744.124 (US2)	5913

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EXAMINER	
PHAM, HUNG Q	
ART UNIT	PAPER NUMBER
2169	

NOTIFICATION DATE	DELIVERY MODE
12/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/803,831	FRANK, JOHN R.	
	Examiner	Art Unit	
	HUNG Q. PHAM	2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,17 and 20* is/are rejected.

7)☒ Claim(s) *14-16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The rejection of claims 1-3, 10-14, 16 and 18 under 35 U.S.C. § 112, second paragraph, has been withdrawn in view of the amendment.

Response to Arguments

1. Applicant's arguments with respect to the rejection of claim 1 under 35 U.S.C. § 102 (b) have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments with respect to the rejection of claim 10 under 35 U.S.C. § 102 (b) have been fully considered but they are not persuasive.

As argued by applicant (Remarks, Page 8):

In support of his rejection of claim 10, the Examiner directs our attention to a passage on page 7 of Smith which he characterizes as disclosing boosting the value of a confidence. The paragraph reads as follows:

> *Each possible location for a toponym is given a score based on (a) its proximity to other toponyms around it, (b) its proximity to the centroid for the document, and (c) its relative importance - e.g. all other things being equal, nations get a higher score than cities. Also at this stage, the system discards as probably false positives places that lack an explicit disambiguator, that receive a low importance score, and that are far away from the local and document centroids. If not thus eliminated, the candidate toponym identification with the highest score is declared the winner. Once the work of the disambiguation system is done, the resulting toponyms are loaded into a relational database for access by the runtime digital library system.*

But there is no mention in this paragraph of boosting a value of a confidence for a selected (toponym, place) pair. It simply describes how a score is computed. And though it does indicate that its score is based on the presence of other toponyms, it does not suggest that the selected (toponym, place) pair has a confidence value and that value is boosted by the presence of other toponyms.

The examiner respectfully disagrees.

As recited in claim 10, the clause ***the value of the confidence*** of the step of ***(1) obtaining a pre-computed initial value for the value of the confidence that the toponym of the selected (toponym, place) pair refers to the place of the selected (toponym, place) pair*** does not exist at the time ***a pre-computed initial value*** is obtained. The claimed languages of the step obtaining clearly indicate that ***a pre-computed initial value*** is obtain, and the purpose is for an intended result, e.g., ***for the value of the confidence.*** Therefore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *it does not suggest that the selected (toponym, place) pair has a confidence value and that value is boosted by the presence of other toponyms*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3. According to the latest decision from the BPAI, a process claim should pass the Bilski test. Under Bilski[1], a claimed process is surely patent-eligible under § 101 if (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. If the applicant would like to appeal the case, the examiner respectfully suggests the applicant to amend the claims by at least tying the steps as recited in claims 1 and 10 to a particular machine or apparatus. The amendment to overcome the 101 for simplifying the issues for appeal will be entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-12 and 17 are rejected under 35 U.S.C. 102(b) as anticipated by Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] in view of Wacholder et al. [Disambiguation of Proper Names in Text].

Regarding claim 1, Smith teaches a computer-implemented method for processing a plurality of toponyms, said method comprising:

based on an analysis of all the documents within a large corpus of documents, identifying geo-textual correlations among readings of the toponyms within the plurality of toponyms, wherein the geo-textual correlations are statistics derived for the corpus of documents rather than for any individual document within the corpus of documents (As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic methods in Nominator (Page 6[2], Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Page 6 Lines 33-34). Possible place names are disambiguated based on local context,

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[1] *See In re Bilski, 2007-1130 (Fed. Cir. 2008) slip op at 10-11.*

document context and general world knowledge. In general, if there are explicit disambiguating tags that authors put after place names, e.g., “Lancaster, PA”, “Vienna, Austria” and if "Philadelphia" and “Harrisburg” occur in the same paragraph, a reference to “Lancaster” is more likely to be the town in Pennsylvania than to the one in England or Arizona (Page 6 Line 39-Page 7 Line 1). As disclosed by Wacholder, during the analysis process of Nominator, proper names in documents without personal title or unknown first name such as “Ruth Lake”, “Beverly Hills”, “Panorama Lake” are assigned low positive scores or zero scores and assigned to PLACE category. Further disambiguation is possible during aggregation across documents by merging if the canonical forms and entity type are identical, e.g., “Ruth Lake” (?PLACE) is merged with “Ruth Lake” (PLACE) (Wacholder, Page 207, Left Column, Line 21-Right Column, Line 12). The teaching of Smith using the Wacholder Nominator as inherited features or obvious features indicate the claimed limitation *based on an analysis of all the documents within a large corpus of documents*, e.g., proper names in the scanned documents in the digital library are analyzed, *identifying geo-textual correlations among readings of the toponyms within the plurality of toponyms*, e.g., identifying geographic textual correlations such as “Lancaster”, "Philadelphia" and “Harrisburg” among reading of “Lancaster”, "Philadelphia" and “Harrisburg” within the names in PLACE category, *wherein the geo-textual correlations are statistics derived for the corpus of documents rather than for any individual document within the corpus of documents*, e.g., geographic textual correlations such as “Lancaster” is a characteristic of a sample document that is derived for disambiguating place names of the scanned documents in the digital library rather than for individual document by merging of identical name/place); and

for each toponym within the plurality of toponyms, using the identified geo- textual correlations to generate a value for a confidence that an occurrence of that toponym within a particular document refers to a corresponding particular geographic location (As further disclosed by Smith (Page 7 Lines 16-29), the

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[2] *Page 1 is the first page of the reference.*

possible toponyms are processed for final disambiguation. Each possible location for a toponym is given a score based on its proximity to other toponyms around it and other factors. The candidate toponym with the highest score is declared the winner. The Smith teaching as discussed reads on the claimed limitation *for each toponym within the plurality of toponyms*, e.g., for each toponym in the PLACE category, *using the identified geo- textual correlations to generate a value for a confidence*, e.g., proximity to other toponyms is used to generate a score for each possible location that can pair with the toponym such as "Philadelphia/ Pennsylvania", "Philadelphia/ England" and "Philadelphia/ Arizona", *that an occurrence of that toponym within a particular document refers to a corresponding particular geographic location*, e.g., the occurrence of Philadelphia refers to Pennsylvania).

Regarding claim 3, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of ***selecting a set of starting values which for each toponym within the plurality of toponyms establishes an initial value for the confidence that the occurrence of that toponym within the particular document refers to the corresponding particular geographic location for the plurality of toponyms, and wherein using the identified geo-textual correlations to generate values for confidences involves modifying the initial values based on the identified geo-textual correlations within the corpus*** (Page 7 Lines 7-30).

Regarding claim 4, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 3, Smith further discloses the step of ***using a method of uniform priors*** (Page 7 Lines 7-30).

Regarding claim 5, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of

identifying within documents in the corpus toponyms that have associated geographic locations that are nearby to each other (Page 6 Line 39-Page 7 Line 1).

Regarding claim 6, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of ***identifying spatial correlation among geographic references of toponyms that are in textual proximity*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 7, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 6, Smith further discloses ***textual proximity means within the same document*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 8, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 6, Smith further discloses ***textual proximity means within the same document or any document closely linked with said same document*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 9, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses the step of ***processing the corpus by a named entity tagger prior to identifying the geo-textual correlations*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 10, Smith teaches a computer-implemented method of generating information useful for ranking a document that includes a plurality of toponyms for which there is

a corresponding plurality of (toponym,place) pairs, there being associated with each (toponym,place) pair of said plurality of(toponym,place) pairs a corresponding value for a confidence that the toponym of that (toponym,place) pair refers to the place of that (toponym,place) pair (), said method comprising:

for a selected (toponym,place) pair of the plurality of (toponym,place) pairs that is found within the target document (As disclosed by Smith, documents in the digital library are scanned for possible proper names and assign the names to PERSON, PLACE or DATE category using simple heuristic methods in Nominator (Page 6[3], Lines 13-16). The system then attempts to match the names classed as geographic, as well as the uncertain names, against a gazetteer (Page 6 Lines 33-34). Possible place names are disambiguated based on local context, document context and general world knowledge. In general, if there are explicit disambiguating tags that authors put after place names, e.g., “Lancaster, PA”, “Vienna, Austria” and if "Philadelphia" and “Harrisburg” occur in the same paragraph, a reference to “Lancaster” is more likely to be the town in Pennsylvania than to the one in England or Arizona (Page 6 Line 39-Page 7 Line 1). As disclosed by Wacholder, during the analysis process of Nominator, proper names in documents without personal title or unknown first name such as “Ruth Lake”, “Beverly Hills”, “Panorama Lake” are assigned low positive scores or zero scores and assigned to PLACE category. Further disambiguation is possible during aggregation across documents by merging if the canonical forms and entity type are identical, e.g., “Ruth Lake” (?PLACE) is merged with “Ruth Lake” (PLACE) (Wacholder, Page 207, Left Column, Line 21-Right Column, Line 12). The teaching of Smith using the Nominator as inherited features or obvious features read on the claimed limitation ***for a selected (toponym,place) pair of the plurality of (toponym,place) pairs that is found within the target document***, e.g., “Philadelphia, ?PLACE” of proper names in PLACE category in a target document is selected);

(1) obtaining a pre-computed initial value for the value of the confidence that the toponym of the selected (toponym, place) pair refers to the place of the selected (toponym, place) pair, said pre-computed initial value derived from a statistical observation about a large corpus of documents (As discussed above with respect to Wacholder teaching, "Philadelphia,? PLACE" could be assigned zero score as *a pre-computed initial value*. The zero score is derived from a statistical scanning the documents in the digital library. The purpose of zero score is for disambiguating the "Philadelphia" name and assigning a score that "Philadelphia" refers to "Pennsylvania" as disclosed by Smith at Page 7 Lines 16-29);

(2) determining if another toponym is present within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair (As disclosed by Smith (Page 6 Line 39-Page 7 Line 7), a toponym within a document could be associated with a plurality of possible places, e.g., "Philadelphia, Pennsylvania", "Philadelphia, England", "Philadelphia, Arizona". In the process of scanning the document, "Lancaster" as *another toponym is present within the document that has an associated place*, e.g., "Pennsylvania", *that is geographically related to the place referred to by* "Philadelphia,? PLACE" is identified); and

(3) if a toponym is identified within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair, boosting the value of the confidence for the selected (toponym, place) pair for the target document (As further disclosed by Smith (Page 7 Lines 16-29), the possible toponyms are processed for final disambiguation. Each possible location for a toponym is given a score based on its proximity to other toponyms around it and other factors. The candidate toponym with the highest score is declared the winner. The Smith teaching indicates *if a toponym is identified within the target document that has an associated place that is geographically related to the place referred to by the selected (toponym, place) pair*, e.g., if "Lancaster" is identified in the document that has Pennsylvania that is geographically related

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[3] *Page 1 is the first page of the reference.*

to the place of "Philadelphia,? PLACE", *boosting the value of the confidence for the selected (toponym, place) pair for the target document*, e.g., the zero score of "Philadelphia,? PLACE" by using Nominator is replaced by the highest score of Smith that indicates "Philadelphia, Pennsylvania").

Regarding claim 11, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 10, Smith further discloses the step of ***identifying another toponym that has an associated geographic region that encompasses the place referred to by the selected (toponym, place) pair*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 12, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 10, Smith further discloses the step of ***identifying another toponym that has an associated place that is geographically nearby the place referred to by the selected (toponym, place) pair*** (Page 6 Line 39-Page 7 Line 1).

Regarding claim 17, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 11, Smith further discloses

performing steps (1) and (2) and (3) for each (toponym,place) pair among the plurality of (toponym,place) pairs that is found within the target document to generate modified values for the confidences for the plurality of (toponym,place) pairs that are found within the target document (Page 6 Line 39-Page 7 Line 29); and

using the modified values to rank the target document according to the target document's relevance to a search query (FIG. 3).

Regarding claim 20, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, Smith further discloses ***generating the value for a confidence that the selected toponym refers to a corresponding geographic location does not involve using information extrinsic to the corpus*** (Page 7 Lines 7-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] in view of Naughton [USP 6,240,425 B1].

Regarding claim 13, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 12, but not teach the step of ***computing a geographical distance between the place associated with the identified toponym and the place referred to by the selected (toponym,place) pair.***

Naughton teaches the technique of computing a geographical distance between two areas (Naughton, Col. 5 Lines 8-27).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the step of computing distance as taught by Naughton in Smith method in order to disambiguating geographic names in a document.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. [Disambiguating Geographic Names in a Historical Digital Library] and Wacholder et al. [Disambiguation of Proper Names in Text] in view of Frank et al. [WO 01/63479 A1].

Regarding claim 2, Smith and Wacholder, in combination, teach all of the claimed subject matter as discussed above with respect to claim 1, but does not teach the step of ***using the value for the confidences generated for the each toponym within plurality of toponyms to rank documents according to their relevance to a search query***.

Frank teach the step of ***using the value for the confidences generated for the each toponym within plurality of toponyms to rank documents according to their relevance to a search query*** (Frank, Page 32 Line 28-Page 33 Line 19).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to include the step of ranking as taught by Frank into Smith method in order to search for a particular document with spatial criteria.

Allowable Subject Matter

Claims 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. PHAM whose telephone number is 571-272-4040. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAMES K. TRUJILLO can be reached on 571-272-3677. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUNG Q. PHAM/
Primary Examiner
Art Unit 2169

December 09, 2008